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DIVISION OF OIL, GAS AND MINING

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October 24, 2002

Rick Olsen, General Manager
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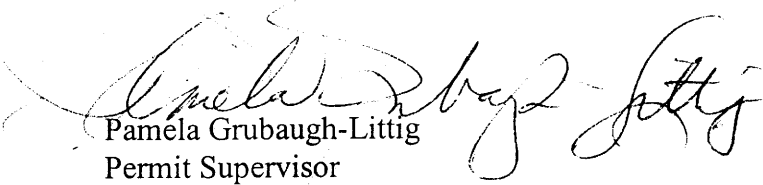
Re: Refuse Pile, Canyon Fuel Company, LLC, Dugout Canyon Mine, C/007/039-SR02D,
Outgoing File

Dear Mr. Olsen:

The above-referenced amendment has been reviewed. There are deficiencies that must be adequately addressed prior to approval. A copy of our Technical Analysis is enclosed for your information. In order for us to continue to process your application, please respond to these deficiencies by January 24, 2003.

If you have any questions, please call me at (801) 538-5268 or Gregg Galecki at (801) 538-5260.

Sincerely,


Pamela Grubaugh-Littig
Permit Supervisor

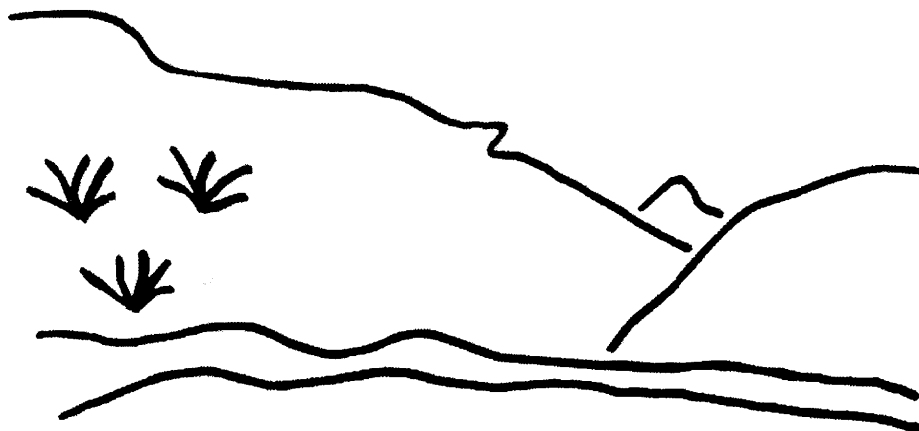
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Enclosure

cc: Price Field Office

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State of Utah



Utah Oil Gas and Mining

Coal Regulatory Program

Dugout Mine
Refuse Pile Amendment
007039 – SR02D-2
Technical Analysis
October 24, 2002

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TECHNICAL ANALYSIS

The Division regulates the Surface Mining Control and Reclamation Act of 1977(SMCRA). When mines submit a Permit Application Package or an amendment to their Mining and Reclamation Plan, the Division reviews the proposal for conformance to the R645-Coal Mining Rules. This Technical Analysis is such a review. Regardless of these analyses, the Applicant must comply with the minimum regulatory requirements as established by SMCRA.

Readers of this document must be aware that the regulatory requirements are included by reference. A complete and current copy of these regulations and a copy of the Technical Analysis and Findings Review Guide can be found at <http://ogm.utah.gov/coal>

This Technical Analysis (TA) is written as part of the permit review process. It documents the Findings that the Division has made to date regarding the application for a permit and is the basis for permitting decisions with regard to the application. The TA is broken down into logical section headings which comprise the necessary components of an application. Each section is analyzed and specific findings are then provided which indicate whether or not the application is in compliance with the requirements.

Often the first technical review of an application finds that the application contains some deficiencies. The deficiencies are discussed in the body of the TA and are identified by a regulatory reference which describes the minimum requirements. In this Technical Analysis we have summarized the deficiencies at the beginning of the document to aid in responding to them. Once all of the deficiencies have been adequately addressed, the TA will be considered final for the permitting action.

It may be that not every topic or regulatory requirement is discussed in this version of the TA. Generally only those sections are analyzed that pertain to a particular permitting action. TA's may have been completed previously and the revised information has not altered the original findings. Those sections that are not discussed in this document are generally considered to be in compliance.

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October 24, 2002

TECHNICAL ANALYSIS

INTRODUCTION

INTRODUCTION

Canyon Fuel Company, LLC has submitted a significant revision to add a refuse pile location for the Dugout Mine. The refuse site will be used to deposit underground waste rock from mining activities. Coal waste from the Dugout Canyon Mine is currently disposed of underground or at the approved waste rock disposal facility at either SUFCO or Skyline Mines or at the Banning Loadout (Section 528.300 of the approved MRP). At the present time, underground mining is producing more rock (refuse) than can be stored underground.

The proposed amendment document was submitted as a 'stand-alone' document, with the exception of the bond calculations that will be included in Appendix 5-6 of the M&RP upon approval. The submittal was originally received by the Division on April 22, 2002, and determined Administratively Complete on August 9, 2002. However, additional information was requested from the applicant prior to the commencement of the technical review, which was submitted on August 30, 2002. The applicant also submitted additional information for Chapter 1 and Chapter 5 of the approved MRP on September 26, 2002, which was not included in this review.

The proposed refuse disposal area is located in T14S R12E Section 18, on property owned by Canyon Fuel Company, LLC. The site is located approximately 6.5 miles southwest of the Dugout Canyon Mine and immediately adjacent to the Carbon County road accessing the mine. The site is located at an elevation of 5,900 feet on a pediment composed of gravelly alluvial deposits overlying the Mancos Shale. The triangular shaped disturbed site covers 16 acres (RA Attachment 2-2). The refuse storage area will consume 5.7 acres. The rest of the site (10 acres) will either be dedicated for topsoil storage, access roads, general storage or remain undisturbed. The design capacity of the refuse pile will be 73,000 tons of refuse with a life expectancy of fifteen years.

Some of the major points of this review include:

- The acreage that will not be disturbed must be disclosed.
- Plate RA-2-1 Soils Map for the proposed refuse site must identify soils immediately adjacent to the north and west permit boundary as well as the extent of the existing disturbance, so an educated 'guesstimate' for the salvageable topsoil beneath Map Unit F can be made.
- The potential for a subsoil pile containing soils of Map Units B and C and a substitute topsoil pile containing the more desirable soils of D, E, and F should be explored and a plan for distribution of subsoil followed by topsoil should be promoted and approximate yardage and cover thickness for each type of cover material should be specified in RA Attachment 2-2.

INTRODUCTION

- Boulders, gravel and projected soil recovery in excess of that recommended for substitute topsoil in RA Attachment 2-1 may not be stored in the substitute topsoil storage pile.
- The layout of the area dedicated to stockpiling and the approximate acreage designated for the substitute topsoil stockpile must be indicated on a map so that the adequacy of the site to store 44,000 cu yds can be assessed.
- A single set of analytical data represents the chemical characteristics of the mine waste. There have been several sets of samples taken of gob, mine waste, refuse, and sediment pond clean-out. All sampling information must be included in the application and the location of such information should be referred to in Section 536.200 of the MRP.
- The application should include as part of the reclamation plan best management practices to reduce wind and water erosion at the site. i.e. The Division has noted that the incorporation of straw or hay into the surface prior to seeding and gouging of the surface reduce wind and water erosion.

The Applicant will construct the refuse site immediately after Division approval. The deficiencies cited within the following analysis must be adequately addressed prior to Division approval of the amendment.

SUMMARY OF DEFICIENCIES

SUMMARY OF DEFICIENCIES

The Technical analysis of the proposed permit changes cannot be completed at this time. Additional information is requested of the Applicant to address deficiencies in the proposal. A summary of deficiencies is provided below. Additional comments and concerns may also be found within the analysis and findings made in this Draft Technical Analysis. Upon finalization of this review, any deficiencies will be evaluated for compliance with the regulatory requirements. Such deficiencies may be conditioned to the requirements of the permit issued by the division, result in denial of the proposed permit changes, or may result in other executive or enforcement action and deemed necessary by the Division at that time to achieve compliance with the Utah Coal Regulatory Program.

Accordingly, the Applicant must address those deficiencies as found within this Draft Technical Analysis and provide the following, prior to approval, in accordance with the requirements of:

Regulations

- R645-301- 536.900**, 1) Analysis of the coal mine waste must include the full suite of parameters listed in Table 6 of the 1988 Division Guidelines for Management of Topsoil and Overburden for Underground and Surface Coal Mining. 2) All previous portal entry, coal mine waste, gob, sediment pond clean-out sampling information must be included in the application and the location of such information should be referred to in Section 536.200 of the MRP. 39
- R645-301-112.700**, update Page 1-4, section 112.700 with a MSHA identification number for the refuse pile or show documentation that the refuse pile has the same identification number as the Dugout Mine. 11
- R645-301-113.300**, The information has not been updated since May of 1999. This section of the MRP will need to be updated. 12
- R645-301-114**, the Applicant must update the Right-of-Entry Information on Page 1-28 in the MRP. 12
- R645-301-117.200**, The Applicant has not submitted a copy of the newspaper advertisement for public comment in the submittal. This information must be included in Appendix 1-2 of the MRP. 14

SUMMARY OF DEFICIENCIES

- R645-301-120**, Clear and concise issues with the soils section include 1) The application should define the "equivalent" of a soil scientist as used in the text on page 2-7 section 232.100. 2) The combined acreage of H and J must be provided, so that the acreage to be reclaimed can be figured by difference..... 34
- R645-301-121.200**, The information provided in the current MRP and the application is contradictory and confusing and must be corrected. This addition to the permit area is hard to find on the maps provided in the Biology section. A great deal of time was wasted finding basic information in the application. The application is confusing because the term disturbance is confused with coal mining disturbance verses gravel pit disturbance. For proposes of coal mine permitting, disturbance means coal mining disturbance unless otherwise noted..... 20
- R645-301-141**, the Applicant must have maps with scales of distance. The maps of the adjacent area will clearly show the lands and waters within those areas and be at a scale determined by the Division, but in no event smaller than 1 = 24,000. 15
- R645-301-222**, 1) RA Attachment 2-1 and Plate RA-2-1 Soils Map for the proposed refuse site must identify soils immediately adjacent to the north and west permit boundary as well as the extent of the existing disturbance. 2) Provide supporting information for Map Unit J..... 23
- R645-301-222.400**, The application must correctly state locations of productivity measurements. i.e. the reference area shown on RA Figure 3-1 was not measured for productivity..... 23
- R645-301-233.100**, Boulders, gravel and projected soil recovery in excess of that recommended for substitute topsoil in RA Attachment 2-1 may not be stored in the substitute topsoil storage pile..... 35
- R645-301-234.210**, The layout of the area dedicated to stockpiling and the approximate acreage designated for the substitute topsoil stockpile must be indicated on a map so that the adequacy of the site to store 44,000 cu yds can be assessed..... 35
- R645-301-242.120, -242.130**, The application should indicate that soils will be handled only when they are in a loose or friable condition or when the moisture content is an optimal 10 – 15%. Generally, two rules apply: a) If the soil sticks to the equipment, wait until the soil has dried to a friable state. b) If the soil is too dry and hard to handle, resembling flour, add water until the soil is wetted to a loose, friable condition. 35
- R645-301-242.200**, The plan must indicate the proposed depth of ripping of compacted areas and the plan must indicate the depth of uncompacted cover over the refuse to allow root growth. 48
- R645-301-244**, 1) The reclamation plan should include best management practices to reduce wind and water erosion at the site. i.e. The Division has noted that the incorporation of straw

SUMMARY OF DEFICIENCIES

- or hay into the surface prior to seeding and gouging of the surface will reduce wind and water erosion. 2) The reclamation plan for the site should specify that all disturbed surfaces will receive extreme surface roughening as described in the Technique Sheet, Part II of The Practical Guide to Reclamation in Utah available on the internet at <http://www.dogm.nr.state.ut.us>. 52
- R645-301-251**, When determining substitute topsoil cover depth over the reclaimed site, RA Attachment 2-2 and Section 242.100 must account for the acreage of undisturbed soil map units H and J. 48
- R645-301-321.100**, No description of the black sagebrush/galleta grass plant community could be found in the MRP. The dominant forb identified as locoweed must be identified to the species level. 20
- R645-301-321.200**, The vegetation production (annual shrub growth, grass and forb) of the black sagebrush/galleta grass and pinyon-juniper communities must be provided. 20
- R645-301-322.200**, The application states that surveys were conducted in 1999 and 2002. The information from DWR shows surveys have not been done in the refuse area since 1998, this statement must be changed to provide correct information. A one half-mile area around the permit area must be surveyed for raptors. 21
- R645-301-322.220**, Information must be provided on threatened and endangered plant and animal species. 21
- R645-301-331**, The plan should state that all areas not actively being utilized will be planted with an interim seed mixture until the vegetation becomes established and final grading. 35
- R645-301-340**, The application must commit to extreme surface roughening technique described in The Practical Guide to Reclamation in Utah. 51
- R645-301-342.100**, Where the plan does not include enhancement measures, a statement will be given explaining why enhancement is not practicable. 46
- R645-301-353.100**, (1) The seed mixture needs to be refined to more closely match the resource data and existing vegetative community. (2) Normal broadcast seeding rates are 50 to 100 pure live seeds per square foot. The quantities of seed must be reduced to that rate and expressed in broadcast rates since this will be the method used. 51
- R645-301-353.220 and R645-301-354**, The vegetation survey found warm season grasses that will need to be seeded separately and prior to the cool season species. The application must address the timing requirements for the various species. 51

SUMMARY OF DEFICIENCIES

R645-301-513.400 , the Applicant must receive MSHA identification number and approval for the Dugout Mine refuse pile. The MSHA approval letter must be added to the MRP. MSHA number for the refuse pile must be added to R645-301-112.700 in the MRP.....	39
R645-301-521.120 , the Applicant will need to address if subsurface features are within, passing through, or passing over, the permit area.....	29
R645-301-521.130 , The Applicant must supply maps of surface and subsurface ownership map of lands contiguous to the permit area.	29
R645-301-521.150 , The Applicant will need to provide additional explanation why 10 feet is used for refuse pile height instead of 14 feet for slope stability.	29
R645-301-521.165 , The proposed acreage, layout of the topsoil stockpile, access road and berm planned for the topsoil stockpile area must be shown on a map as well as the acreage that will not be disturbed at the site.	43
R645-301-527.100 , the access road from the Carbon County road to the refuse pile must be classified as a primary road.....	36
R645-301-527.200 , the plan must include a detailed description of each road used, or maintained, within the proposed permit area. The description will include a map with the appropriate cross section.....	37
R645-301-527.210 , specification for each road width, road gradient, road surface, road cut, fill embankment, culvert, bridge, drainage ditch, and drainage structure.	37
R645-301-527.230 , A maintenance plan describing how roads will be maintained throughout their life to meet the design standards throughout their use.	37
R645-301-527.240 , A commitment that if a road is damaged by a catastrophic event, such as flood or earthquake, the road will be repaired as soon as practical after the damage has occurred.....	37
R645-301-542.100 , A detailed timetable for the completion of each major step in the reclamation plan. If the timetable is correct, explain why it would take 24 months to reclaim this site.....	45
R645-301-553.150 , The operational and final contours of the refuse pile must be designed to maximize soil moisture and minimize evaporation and solar heat. The refuse pile must be redesigned to maximize the east-facing slope and minimize the south and southwest facing slopes.....	51
R645-301-553.251 , The final configuration for the refuse pile will not be steeper than 2h:1v (50 percent).	47

SUMMARY OF DEFICIENCIES

R645-301-724, The application must include climatological information for the mine site.....	19
R645-301-761, Identify on RA Plate 7-3 which portions of the channels will have riprap installed, and provide or refer to a cross section diagram illustrating the proposed riprap design.	50
R645-310-232.500, The potential for a subsoil pile containing soils of Map Units B and C and a substitute topsoil pile containing the more desirable soils of D, E, and F should be explored and a plan for distribution of subsoil followed by topsoil should be promoted and approximate yardage and cover thickness for each type of cover material should be specified in RA Attachment 2-2.....	34
R645-624.100, On RA Figure 6-1, include a legend identifying the geologic units found on the map.....	25
R645-724.100, Groundwater information for the Refuse Pile storage area needs to be on site. The proposed groundwater monitoring wells are located too far from the work area. The Division recommends well DH-1 be used for characterization and monitoring of the groundwater at the Refuse Pile storage area.	27
R645-724.310, The potentiometric surface illustrated on RA Figure 7-1 needs to correspond with baseline information, or information needs to be provided on how the potentiometric surface was determined.	27
R645-731.212, Include water quality analysis of Well DH-1 in the groundwater monitoring program.	41
R645-742.221.31, Provide a commitment to install clean-out markers in the sedimentation pond.	41
R645-742.312.1, Provide a discussion of the why 5 fps is used as the channel lining criteria. ...	41

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SUMMARY OF DEFICIENCIES

GENERAL CONTENTS

GENERAL CONTENTS

IDENTIFICATION OF INTERESTS

Regulatory Reference: 30 CFR 773.22; 30 CFR 778.13; R645-301-112

Analysis:

The Identification of Interest is in the current Mining and Reclamation Plan of the Dugout Mine. This information in the MRP was reviewed and has not changed. However, the Applicant has given information on Page 1-1 and 1-2 related to the applicant, operator, resident agent, contact person and the person who will pay abandoned mine reclamation fees. This is the same information provided in the MRP.

The officers, directors, and ownership information was incorporated in the MRP August 15, 2001.

The Applicant will need to obtain a MSHA identification number for the refuse pile or show documentation that the refuse pile has the same ID number as Dugout Mine. This is not in the MRP as indicated on Page 1-4 of this amendment.

Findings:

The information provided has not met the minimum requirements of the General Contents – Identification of Interest section of the regulations. Prior to final approval, the applicant must supply the following information in accordance with:

R645-301-112.700, update Page 1-4, section 112.700 with a MSHA identification number for the refuse pile or show documentation that the refuse pile has the same identification number as the Dugout Mine.

VIOLATION INFORMATION

Regulatory Reference: 30 CFR 773.15(b); 30 CFR 773.23; 30 CFR 778.14; R645-300-132; R645-301-113

Analysis:

This information is in the current Mining and Reclamation Plan. This information was last updated in May 1999. Canyon Fuel Company has received at least one violation since January 1999. This section will need to be updated.

Findings:

The Applicant has not met the minimum requirements of the General Contents – Violation Information section of the regulations. Prior to final approval, the applicant must supply the following information in accordance with:

R645-301-113.300, The information has not been updated since May of 1999. This section of the MRP will need to be updated.

RIGHT OF ENTRY

Regulatory Reference: 30 CFR 778.15; R645-301-114

Analysis:

Canyon Fuel Company, LLC, owns the property on which the refuse pile will be placed. However, on Page 1-28 this information is not indicated in the MRP.

Findings:

The Applicant has not met the minimum requires of the General Contents – Right of Entry section of the regulations. Prior to final approval, the applicant must supply the following information in accordance with:

R645-301-114, the Applicant must update the Right-of-Entry Information on Page 1-28 in the MRP.

LEGAL DESCRIPTION AND STATUS OF UNSUITABILITY CLAIMS

Regulatory Reference: 30 CFR 778.16; 30 CFR 779.12(a); 30 CFR 779.24(a)(b)(c); R645-300-121.120; R645-301-112.800; R645-300-141; R645-301-115.

GENERAL CONTENTS

Analysis:

The Applicant has submitted maps showing the refuse pile permit area. The Applicant has shown that the permit area is the same as the disturbed area. This is shown on Plate 5-1. The Applicant has advertised in the newspaper but will need to submit a copy of the advertisement to the Division. This is addressed in the Public Notice and Comment section in this review.

Findings:

The Applicant has met the minimum requirements of the General Contents – Legal Description and Status of Unsuitability Claims section of the regulations.

PERMIT TERM

Regulatory References: 30 CFR 778.17; R645-301-116.

Analysis:

This information is in the MRP and has not changed.

Findings:

The Applicant has met the minimum requirements of the General Contents – Permit Term section of the regulations.

PUBLIC NOTICE AND COMMENT

Regulatory References: 30 CFR 778.21; 30 CFR 773.13; R645-300-120; R645-301-117.200.

Analysis:

Administrative Completeness by the Division has been given to the Refuse Pile amendment. The Applicant has advertised in the newspaper for public comment. A copy of the advertisement must be submitted and be included in Appendix 1-2 of the MRP.

Findings:

The Applicant has not met the minimum requirements of the Public Notice and Comments section of the regulations. Prior to final approval, the applicant must supply the following information in accordance with:

R645-301-117.200, The Applicant has not submitted a copy of the newspaper advertisement for public comment in the submittal. This information must be included in Appendix 1-2 of the MRP.

PERMIT APPLICATION FORMAT AND CONTENTS

Regulatory Reference: 30 CFR 777.11; R645-301-120.

Analysis:

The Applicant has complied with R645-301.120. The information is in the Mining and Reclamation Plan and this amendment.

Findings:

The Applicant has met the minimum requirements of the General Contents – Permit Application Format and Contents section of the regulations.

REPORTING OF TECHNICAL DATA

Regulatory Reference: 30 CFR 777.13; R645-301-130.

Analysis:

The information submitted contains names of person or organizations that collected and analyzed the data.

Findings:

The Applicant has met the minimum requirements of the General Contents – Reporting of Technical Data section of the regulations.

GENERAL CONTENTS

MAPS AND PLANS

Regulatory Reference: 30 CFR 777.14; R645-301-140.

Analysis:

The Applicant has submitted maps with a scale of 1" = 100' for the permit area. The Applicant has submitted maps of the location of the permit with adjacent area but no scale is given. Figures 1-1A and 1-1B do not have a distance scale associated with the map.

Findings:

The Applicant has not met the minimum requirements of the General Contents – Maps and Plans section of the regulations. Prior to final approval, the applicant must supply the following information in accordance with:

R645-301-141, the Applicant must have maps with scales of distance. The maps of the adjacent area will clearly show the lands and waters within those areas and be at a scale determined by the Division, but in no event smaller than 1" = 24,000.

COMPLETENESS

Regulatory Reference: 30 CFR 777.15; R645-301-150.

Analysis:

The Division has determined that the Refuse Pile significant revision is administratively complete. A determination letter dated August 2, 2002 was sent to the operator.

Findings:

The Applicant has met the minimum requirements of the General Contents - Completeness section of the regulations.

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GENERAL CONTENTS

ENVIRONMENTAL RESOURCE INFORMATION

Regulatory Reference: Pub. L 95-87 Sections 507(b), 508(a), and 516(b); 30 CFR 783., et. al.

GENERAL

Regulatory Reference: 30 CFR 783.12; R645-301-411, -301-521, -301-721.

Analysis:

The proposed refuse disposal area is located in T14S R12E Section 18. The site is located at an elevation of 5,900 feet on a pediment composed of gravelly alluvial deposits overlying the Mancos Shale. The triangular shaped disturbed site covers approximately 16 acres (RA Attachment 2-2) and is immediately adjacent to the county road. The land is owned by the Permittee. The site has been used as a source of gravel and fill for the county road construction and for the mine site.

Pinyon-juniper and Black sagebrush/galleta grass vegetation communities exist at the site. The soils of the area were evaluated by the Soil Conservation Service (SCS) and serve as the typical pedon of Haverdad loam 1 to 8 percent slopes in the 1988 Carbon County Soil Survey (Appendix S5 of RA Attachment 2-1). The SCS estimated the average annual precipitation to be about 12 – 14 inches.

The Applicant has submitted information on existing surface and subsurface facilities and features; see Page 5-7. No buildings are located in or within 1,000 of the permit area. No underground mining activities will occur in the refuse permit area. Therefore, there will be no impacts by underground mining activities.

Findings

The Applicant adequately addresses the minimum requirements of the Environmental Resource Information section of the regulations.

PERMIT AREA

Regulatory Requirements: 30 CFR 783.12; R645-301-521.

Analysis:

There will be no surface or underground coal mining in the proposed permit area.

Findings:

The Applicant has adequately addressed the minimum requirements of the Environmental Resource Information -Permit Area section of the regulations.

HISTORIC AND ARCHEOLOGICAL RESOURCE INFORMATION

Regulatory Reference: 30 CFR 783.12; R645-301-411.

Analysis:

A cultural resource survey was performed by Senco-Phenix of the area to be disturbed on June 13, 1998 (attachment 4-1). The area was walk with no more than 50 feet between transects. One historic site (42CB-1243) and two isolated prehistoric findings were discovered. None of these sites or findings are eligible for nomination to the historic register.

There are no cemeteries, public parks, or units of the National System of Trails or the Wild and Scenic Rivers System located within or adjacent to the refuse pile permit area.

Findings

Information provided meets the minimum Historic and Archeological Resource requirements of the regulations.

CLIMATOLOGICAL RESOURCE INFORMATION

Regulatory Reference: 30 CFR 783.18; R645-301-724.

Analysis:

Page 7-4 of the submittal and page 7-39 of the approved MRP indicate that climatological information for the site is summarized in Appendix 4-2 of the MRP. This is an incorrect reference, Appendix 4-2 is titled Land Uses. The Division could not locate the climatological information referred to on page 7-39 of the MRP and on page 7-4 of the submittal.

ENVIRONMENTAL RESOURCES INFORMATION

Findings

The information provided does not adequately addresses the minimum requirements of the Environmental Resource Information - Climatological Information section of the regulations. Prior to approval, please provide the following in accordance with:

R645-301-724, The application must include climatological information for the mine site.

VEGETATION RESOURCE INFORMATION

Regulatory Reference: 30 CFR 783.19; R645-301-320.

Analysis:

The information provided in the current MRP and the application is contradictory and confusing and must be corrected. The addition to the permit area is hard to find on the maps provided. A great deal of time was wasted finding basic information in the application.

Two vegetation communities occur within the proposed permit addition. They are black sagebrush/galleta grass and pinyon – juniper (section 321.100). The grasses in the community include Salina wildrye and galleta grass. The dominant forb is locoweed (section 321.100). RA Attachment 3-1 Vegetation Data notes Astragalus sp. and Unknown forb often. Since this is the dominant forb in the community the locoweed should be identified to species. Legumes are known to fix nitrogen and may be an important forb to reestablish at reclamation.

The application states that vegetation communities are described in the approved MRP. The MRP (page 3-6) reports the pinyon – juniper community to have a cover of 66 percent and 2334 woody species per acre. No description of the black sagebrush/galleta grass plant community could be found in the MRP.

The application states that the proposed site has been previously disturbed for the excavation of gravel. However, vegetation studies (Attachment 3-1) and vegetation maps (Figure 3-1 and 3-2) indicate the site is in fairly good condition. The pinyon-juniper site had 26 percent vegetative cover and 453 woody plants per acre. The black sagebrush/galleta grass community has 40 percent vegetative cover and 2788 woody plants per acre.

Vegetation productivity information was determined by George Cook, at the time a NRCS employee. Productivity of the area adjacent to the disturbed and reference area was 460 pounds per acre (section 321.200). However, Mr. Cook surveyed the topsoil storage area and the borrow area (Attachment 3-1) and not the reference area and refuse pile area. The vegetation

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production (annual shrub growth, grass and forb) of the black sagebrush/galleta grass and pinyon-juniper communities must be provided.

Findings:

Information provided in the application is not considered adequate to meet the minimum Vegetation information requirements of the regulations. Prior to approval, the Applicant must provide the following in accordance with:

R645-301-121.200, The information provided in the current MRP and the application is contradictory and confusing and must be corrected. This addition to the permit area is hard to find on the maps provided in the Biology section. A great deal of time was wasted finding basic information in the application. The application is confusing because the term disturbance is confused with coal mining disturbance verses gravel pit disturbance. For proposes of coal mine permitting, disturbance means coal mining disturbance unless otherwise noted.

R645-301-321.200, The vegetation production (annual shrub growth, grass and forb) of the black sagebrush/galleta grass and pinyon-juniper communities must be provided.

R645-301-321.100, No description of the black sagebrush/galleta grass plant community could be found in the MRP. The dominant forb identified as locoweed must be identified to the species level.

FISH AND WILDLIFE RESOURCE INFORMATION

Regulatory Reference: 30 CFR 784.21; R645-301-322.

Analysis:

Two raptor nests have been identified within one mile of the proposed refuse site. Nest number 1 is a ferruginous hawk nest, which was identified as dilapidated in 1998 and has not been surveyed since. Nest number 2 is also a ferruginous hawk nest not surveyed since 1998. The application states that surveys were conducted in 1999 and 2002. The information from DWR shows surveys have not been done in the refuse area since 1998. A one half-mile area around the permit area must be surveyed for raptors.

The application states that the area is within critical deer winter range and elk winter range. DWR maps indicate that it is adjacent to year-long pronghorn habitat.

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The application states that there are no threatened or endangered (T&E) plant and wildlife species within the area to be disturbed. This is based on a letter from DWR in Appendix 3-2 and a vegetation survey report in Appendix 3-1. The purpose of the vegetation survey report was to establish plant community data and not survey for T&E plant species. The letter from DWR in Appendix 3-2 concerns a raptor survey in 1996. A letter from U.S. Fish and Wildlife Service (USFWS), dated April 12, 1996 was found in Appendix 3-2 stating no T&E species. USFWS generally does not provide concurrence six years from the date of the initial application. Additional T&E information is required prior to the Division consulting with USFWS.

The Utah Natural Heritage Program was asked for any information in their database concerning T&E and sensitive species in proposed refuse area. They reported the following on October 21, 2002:

"A sighting of an individual lark bunting in 1952--the species is not listed on the state or federal sensitive species lists, but the Utah Natural Heritage Program is "tracking" the species. There are also 3 recent records for ferruginous hawk nests nearby (within ½ -2.25 mi away). Also, a small portion of the area (NW corner) is identified as a critical value deer winter use area."

Findings

Information provided in the application is not considered adequate to meet the minimum Fish and Wildlife Resource Information requirements of the regulations. Prior to approval, the Permittee must provide the following in accordance with:

R645-301-322.200, The application states that surveys were conducted in 1999 and 2002. The information from DWR shows surveys have not been done in the refuse area since 1998, this statement must be changed to provide correct information. A one half-mile area around the permit area must be surveyed for raptors.

R645-301-322.220, Information must be provided on threatened and endangered plant and animal species.

SOILS RESOURCE INFORMATION

Regulatory Reference: 30 CFR 783.21; 30 CFR 817.22; 30 CFR 817.200(c); 30 CFR 823; R645-301-220; R645-301-411.

Analysis:

The soils of the area were evaluated by the Soil Conservation Service and serve as the typical pedon of Haverdad loam [fine-loamy, mixed (calcareous), mesic Ustic Torrifluvents] one

to eight percent slopes in the 1988 Carbon County Soil Survey (Appendix S5 of RA Attachment 2-1). The site has since been developed into a gravel pit.

The refuse disposal site was surveyed in 1999 by Mr. Daniel Larsen, Soil Scientist with Environmental Industrial Services of Helper, Utah. Using supporting information obtained from 10 pits and twenty-two soil samples, Attachment 2-1 identifies and describes thirteen soil map units at the site. The soil map units are shown on Soils Inventory Map SM-1 in Attachment 2-1. The map units have been reproduced on Soils Map RA Plate 2-1, except that RA Plate 2-1 does not show the soil type L that covers an area of about 50 X 85 feet (approximately 0.1 acres). Soil characteristics at the site are also described in RA Attachment 5-2.

Undisturbed soils remain to a limited extent within the proposed permit boundary. The Typic Haplocalcids is represented by sample site DCW5 or Map Unit I on the southwest edge of the disturbed area and sample location DCW6 or Map Unit D on the west. Mr. Larsen indicates that the texture of the soils places them either in the Strych or Hernandez series.

Strych soils are loamy-skeletal, mixed mesic Ustic Haplocalcid (formerly classified as Ustollic Calciorthids in the 1988 Carbon County Soil Survey). Hernandez soils are fine-loamy, mixed, mesic Ustollic Calciorthids. The Hernandez soils are deeper soils than the Strych, with far less stones, cobbles, and pebbles.

Order: Aridisol (formed in desert climate)
Suborder: Calcic (accumulation of calcium carbonate)
Great Group: Haplocalcid (other calcids)
Subgroup: Ustic Haplocalcid
(moisture control section is dry less than $\frac{3}{4}$ of the time when the temperature is above 5 C and aridic soil moisture regime bordering on ustic)

The Haverdad loam series soils (Typic Torrifluvents) are represented by site DCW10 or Map Unit H along the south and east of the disturbed area.

Order: Entisol (young, little horizonation, little pedogenesis)
Suborder: Fluvents (flood plain)
Great Group: Torrifluvents (aridic or torric moisture regime)
Subgroup: Typic Torrifluvents (other Torrifluvents)

Map Unit J has been outlined between Map Unit H and the gravel pit, but there is no supporting information for the designation.

Plate 2-1 Native Soil Types Present in the Dugout Canyon Mine Permit Area does not extend to Township 14 South. The information provided by RA Attachment 2-1 seems randomly chosen and does not include map unit and soil identification along the undisturbed north and western boundary of the proposed refuse site. This information is necessary in this case, since all

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soils within the permit area have been previously disturbed. The information will prove useful for estimating the depth of soil available in Map Unit F for use as topsoil (RA Attachment 2-2). RA Attachment 2-1 and Plate RA-2-1 Soils Map for the proposed refuse site must identify soils immediately adjacent to the north and west permit area boundary.

Soil productivity at the site was evaluated in June, 1998, by Mr. George S. Cook, Range Conservationist with the NRCS (Section 321.200). Productivity on the topsoil storage area was reported to be 460 lbs/acre with a potential for 500 lbs/ac. The condition of the topsoil pile was fair. The gravel borrow pit (proposed as the location of the refuse disposal site) was estimated to have 500 lbs/acre productivity with a potential for 550 lbs/ac. The condition was also Mid Seral fair. Productivity of the reference area shown on RA Figure 3-1 was not evaluated by Mr. Cook as described in Section 321.200.

The application describes the dominant grasses as Salina wildrye and galleta grass and the dominant forb as locoweed. Locoweed is a common name for species within three plant genus: Aragalus, Astragalus and Oxytropis.

Findings

The information provided does not adequately addresses the minimum requirements of the Soils Resource Information section of the regulations. Prior to approval, please provide the following in accordance with:

R645-301-222, 1) RA Attachment 2-1 and Plate RA-2-1 Soils Map for the proposed refuse site must identify soils immediately adjacent to the north and west permit boundary as well as the extent of the existing disturbance. 2) Provide supporting information for Map Unit J.

R645-301-222.400, The application must correctly state locations of productivity measurements. i.e. the reference area shown on RA Figure 3-1 was not measured for productivity.

LAND-USE RESOURCE INFORMATION

Regulatory Reference: 30 CFR 783.22; R645-301-411.

Analysis:

The area to be disturbed has been previously used as a gravel pit, rangeland and wildlife habitat. Adjacent BLM land uses are cattle from November 16 to June 15 for 835 AUM's. Currently the Dugout Canyon Road runs adjacent to the site (section 411.130).

Findings

The information provided adequately addresses the minimum requirements of the Environmental Resources Information - Land Use Resource Information section of the regulations.

ALLUVIAL VALLEY FLOORS

Regulatory Reference: 30 CFR 785.19; 30 CFR 822; R645-302-320.

Analysis:

Alluvial Valley Floor Determination

Information contained in Section 9 of the submittal adequately addresses and summarizes the potential for alluvial valley floor impacts. Based on information provided in Chapter 9 of the submittal, no impacts will occur to designated alluvial valley floors due to mining and reclamation operations within the permit and adjacent areas.

Findings:

The information provided adequately addresses the minimum requirements of the Environmental Resources Information – Alluvial Valley Floors section of the regulations.

PRIME FARMLAND

Regulatory Reference: 30 CFR 785.16, 823; R645-301-221, -302-270.

Analysis:

As noted in Section 221, the prime farmland status of the area was investigated in April 1996 by the Natural Resources Conservation Service. A letter from the NRCS is located at the end of RA Attachment 3-1 Vegetation Data. In the letter, the State Soil Scientist, William Broderson, writes that the area could not contain important farmlands because there is no developed irrigation system on arid soils.

Two of the soils identified in Appendix S5 of RA Attachment 2-1, soil #50 Haverdad loam and soil Hernandez family soils are potentially prime farmland soils, when irrigated. Soil

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#50 Haverdad loam is in the land use capability class II-e-2. Soils in the Hernandez family range from land use capability class II-e-2 to III-e-2.

The recent use of the site (1988- 1999) has been for a gravel pit and much of the original soil surface has been lost. The site is bisected by a deep ravine. The Dugout Canyon Mine is the landowner. The post-mining land use is wildlife habitat and grazing.

Findings

The Division concurs with the Natural Resources Conservation Service that there is no source of irrigation for farming and therefore no prime farmlands at the site.

GEOLOGIC RESOURCE INFORMATION

Regulatory Reference: 30 CFR 784.22; R645-301-623, -301-724.

Analysis:

Included in the current Refuse Pile amendment is a general surface geology map and borehole logs that adequately characterize the area surrounding the Refuse Pile storage area. However, the geologic map is missing a legend that identifies the geologic units cited on the map.

Findings:

Information in the proposal is not adequate to meet the requirements of the Environmental Resource Information – Geologic Resource Information section of the regulations. Prior to final approval, the applicant must supply the following information in accordance with:

R645-624.100, On RA Figure 6-1, include a legend identifying the geologic units found on the map.

HYDROLOGIC RESOURCE INFORMATION

Regulatory Reference: 30 CFR Sec. 701.5, 784.14; R645-100-200, -301-724.

Analysis:

Sampling and Analysis

The sampling conducted and submitted for baseline information is adequate for initial characterization of the hydrologic system. No analysis of surface water or groundwater was conducted as part of baseline data; no flow was documented at the surface sites, and only depth was collected at the groundwater monitoring locations.

Baseline Information

A total of four years of quarterly data has been collected and submitted for surface-water monitoring sites SS-1 and SS-2, and groundwater wells DH-1, DH-2, and DH-3. This is considered adequate information for initial characterization of the hydrologic system.

A review of the baseline data submitted for groundwater wells DH-1, DH-2, and DH-3 does not appear to correspond with the information provided as the potentiometric surface illustrated on RA Figure 7-1. As an example, Figure 7-1 indicates the potentiometric head/elevation as being 5833.44 ft., while the baseline data (submitted on page 3 of RA Attachment 7-1, Baseline Data) indicates the average head/elevation at approximately 5849.00 ft.

Ground-water Information

Section 724.100 refers to groundwater samples collected from monitoring wells located approximately six miles north of the Refuse Pile storage area. These wells are located too far from the area they are proposed to be characterizing, located in different surface geologic units (Qal vs. Qg), and the well location map needs to be included in the Refuse Pile amendment or Dugout MRP and not referenced to a map located in a different MRP. In addition, drill logs for well DH-1 (found in RA Attachment 6-1) indicate the potentiometric surface of the groundwater is located approximately 9-10 feet above the contact of the Mancos Shale and within Quaternary-aged alluvium.

Surface Water Information

Section 722.200 indicates Dugout Creek is located 1/8 to 1/4 mile from the Refuse Pile area. Information that needs to be included is a statement further defining the nature of Dugout Creek (i.e. intermittent but ephemeral in nature or truly intermittent), and a map indicating the distance overland flow has to travel to get to the creek. A recommendation would be to modify the scale on RA Plate 7-1 to indicate where surface flow would enter Dugout Creek.

Baseline Cumulative Impact area Information

Section 728.100 of the Refuse Pile Amendment identifies the potential impacts of storing refuse and other materials in the proposed area on the quality and quantity of surface-water and groundwater.

Modeling

No hydraulic modeling was conducted nor considered necessary for the Refuse Pile storage area.

Alternative Water Source Information

Identification of Alternative Water Source Information is not necessary. A query of the Utah Division of Water Rights database indicates no water rights exist within a 10,000 foot radius of the proposed Refuse Storage area.

Probable Hydrologic Consequences Determination

Section 728.300 of the Refuse Pile Amendment addresses mitigating measures that will be implemented to minimize potential impacts specifically from acid-or-toxic-forming materials, sediment yield, groundwater and surface water availability, potential hydrocarbon contamination, and road salting. Baseline information supporting the determination indicates the Refuse Pile storage area is located in the Mancos Shale which is not considered a to be a regional or local aquifer, is also considered to be relatively impermeable, and the refuse pile area is limited to only a few acres.

Findings:

Information in the proposal is not adequate to meet the requirements of the Environmental Resource Information – Hydrologic Resource Information section of the regulations. Prior to final approval, the applicant must supply the following information in accordance with:

R645-724.310, The potentiometric surface illustrated on RA Figure 7-1 needs to correspond with baseline information, or information needs to be provided on how the potentiometric surface was determined.

R645-724.100, Groundwater information for the Refuse Pile storage area needs to be on site. The proposed groundwater monitoring wells are located too far from the work area. The Division recommends well DH-1 be used for characterization and monitoring of the groundwater at the Refuse Pile storage area.

MAPS, PLANS, AND CROSS SECTIONS OF RESOURCE INFORMATION

Regulatory Reference: 30 CFR 783.24, 783.25; R645-301-323, -301-411, -301-521, -301-622, -301-722, -301-731.

Analysis:

Existing Structures and Facilities Maps

There are no existing structures at the proposed refuse site. The Applicant has submitted a surface facilities projected layout of the refuse site. See Plate 5-1 of this amendment. However, the Applicant will have to supply the Division with an As-built surface facility map of the area after construction work is completed. This As-built map must be submitted 30-days after completion of the refuse pile area.

Existing Surface Configuration Maps

Several of the maps in the significant revision have the existing surface configuration. This information meets the requirements of this section.

Permit Area Boundary Maps

The Applicant has submitted an updated permit area map with this submittal. The permit area will also be the disturbed area.

Surface and Subsurface Ownership Maps

The surface and subsurface ownership map for this area was not included in this submittal.

Surface and subsurface manmade features maps

The surface and subsurface ownership map for this area was not included in this submittal.

Contour Maps

The Applicant has submitted existing (Plate 5-1), operational (Plate 5-2) and final reclamation (Plate 5-3) contour maps. The difference between the operation and final reclamation contours are the thickness of the topsoil.

The maps are on a two-foot contour interval. Reviewing the refuse pile construction contours there are seven contour lines. This would indicate a minimum of a fourteen feet rise in

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the pile from bottom to top. Page 5-15 in the text addresses only a ten feet construction height. Also on RA Attachment 5-2 (Pile Slope Stability) uses a design of 10 feet in height. Talking to Tom Scuhoski, Engineer at EarthFax Engineering on July 11, 2002 indicated that the refuse pile is incised. The calculation on slope stability is determined by refuse material above ground level. The Applicant must give additional explanation for the determination that the refuse pile height is 10 feet instead of 14 feet. This would eliminate the confusion in this section.

Monitoring Sampling Location Maps

RA Figure 7-1 adequately identifies the location of water monitoring sites.

Findings:

Information in the proposal is not adequate to meet the requirements of the Environmental Resource Information – Maps, Plans, and Cross Sections of Resource Information section of the regulations. Prior to final approval, the applicant must supply the following information in accordance with:

R645-301-521.120, the Applicant will need to address if subsurface features are within, passing through, or passing over, the permit area.

R645-301-521.130, The Applicant must supply maps of surface and subsurface ownership map of lands contiguous to the permit area.

R645-301-521.150, The Applicant will need to provide additional explanation why 10 feet is used for refuse pile height instead of 14 feet for slope stability.

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MINING OPERATIONS AND FACILITIES

Regulatory Reference: 30 CFR 784.2, 784.11; R645-301-231, -301-526, -301-528.

Analysis:

Facilities and Structures

The Applicant has submitted facilities map Plate 5-1 which includes sediment pond, storage area, access road, topsoil storage, culvert (DC-1), and refuse storage area. This map contains the necessary information. Plate 5-1 is P.E. certified.

Findings:

The Applicant has adequately addressed the minimum requirements of the Operation Plan – Mining Operations and Facilities section of the regulations.

EXISTING STRUCTURES:

Regulatory Reference: 30 CFR 784.12; R645-301-526.

Analysis:

There are no existing structures in this area.

Findings:

The Applicant has adequately addressed the minimum requirements of the Operation Plan – Existing Structures section of the regulations.

RELOCATION OR USE OF PUBLIC ROADS

Regulatory Reference: 30 CFR 784.18; R645-301-521, -301-526.

Analysis:

The Applicant will be transporting refuse material from the Dugout Mine to the Refuse site by way of a Carbon County Road. The Applicant will have to use State licensed and inspected vehicles to transport waste material from the mine to the refuse site.

Findings:

The Applicant adequately addressed the minimum requirements of the Operation Plan – Relocation or Use of Public Road section of the regulations.

AIR POLLUTION CONTROL PLAN

Regulatory Reference: 30 CFR 784.26, 817.95; R645-301-244, -301-420.

Analysis:

The application indicates that operations will be conducted in accordance with the current Air Quality Approval Order (AO) dated January 5, 1999 (Appendix 4-1). The AO indicates that visible emissions are limited to 20% opacity and fugitive dust will be controlled with water sprays and/or chemically treated. Treatment shall be of sufficient frequency and quantity to maintain a damp surface.

Findings:

The information provided meets the minimum requirements of the Operation Plan – Air Pollution Control Plan section of the regulations.

FISH AND WILDLIFE INFORMATION

Regulatory Reference: 30 CFR Sec. 784.21, 817.97; R645-301-322, -301-333, -301-342, -301-358.

Analysis:

Protection and Enhancement Plan

A protection and enhancement plan cannot be developed until all resource data has been provided.

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Endangered and Threatened Species

All resource information has not been provided.

Findings:

Information provided in the application is not considered adequate to meet the minimum Fish and Wildlife Information requirements of the regulations. An Operational protection plan cannot be developed until all resource data has been provided.

TOPSOIL AND SUBSOIL

Regulatory Reference: 30 CFR Sec. 817.22; R645-301-230.

Topsoil Removal and Storage

The triangular shaped disturbed site covers approximately 16 acres (RA Attachment 2-2) and is immediately adjacent to the county road. The refuse storage area will consume 5.68 acres. The rest of the site (10.4 acres) will either be dedicated for topsoil storage, access roads, general storage or undisturbed. The application must provide the acreage of Map Unit H and J that will be undisturbed.

There is no topsoil available for salvage on the previously disturbed site. However, there are areas of suitable substitute topsoil. The application indicates that a professional soil scientist "or equivalent" will be on-site during soil salvage operations. This is not very clear.

RA Plate 2-1 outlines areas of substitute topsoil salvage and depths of salvage. No soil will be salvaged in map units H and J on the eastern leg of the triangular disturbed area. The combined acreage of H and J must be provided, so that the acreage to be reclaimed can be figured.

RA Table 2-2 estimates the volume of salvageable soil as 44,317 cubic yards. The acreage of recovery sums to 16.1 acres. Half of the substitute topsoil will come from areas B, C and E described in RA Table 2-1 as gravelly, loam and gravelly, clay loam. Soils in map units B and C would be better suited as a subsoil according to section 3.4 of Attachment 2-1. The least rocky soils and most suitable substitute topsoils in the project area are those in map units D, E, and F. Accordingly, the Permittee should evaluate the possibility of having a subsoil and topsoil pile on the site.

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The recovery of substitute topsoil described in RA Table 2-2 and RA Attachment 2-2 does not agree with the professional soil scientist recommendation for recovery in Table 3.41 of Attachment 2-1. In the case of soil units A, B, C, E, G, K, L and M soil recovery has been over estimated. The total over estimation is approximately 5,840 cu yds. This excess soil, boulders (unit K) and piled gravel (unit L) may not be stored in the substitute topsoil storage pile.

Substitute topsoil will be stockpiled in the northwest corner of the disturbed area (RA Plate 5-1). The Permittee indicates actual cross sections of the soil stockpile can not be shown because salvage quantities are uncertain. A portion of the topsoil stockpile area will be dedicated to a road around the stockpile and a berm to protect the stockpile. The layout of the area dedicated to stockpiling and the approximate acreage designated for the substitute topsoil stockpile must be indicated on a map so that the Division can calculate the adequacy of the proposal to store 44,000 cu yds on the site. The topsoil storage area must be shown on a map that has been prepared and certified according by a professional engineer.

The soil will be placed in 1.5 to 2 foot lifts with track equipment. The stockpile will be stabilized by the interim seed mix described in Section 341.200 and protected with a berm. The Permittee should instruct the contractor to handle soils only when they are in a loose or friable condition or when the moisture content is an optimal 10 – 15%. Generally, two rules apply: 1) If the soil sticks to the equipment, wait until the soil has dried to a friable state. 2) If the soil is too dry and hard to handle, resembling flour, add water until the soil is wetted to a loose, friable condition.

Although the applicant indicates in Sections 231.100 and 234.300 that approval from the Division will be sought before disturbing the soils in the substitute topsoil storage pile.

Findings:

The information provided does not adequately address the minimum requirements of the Operations Plan - Topsoil and Subsoil section of the regulations. Prior to approval, please provide the following in accordance with:

R645-301-120, Clear and concise issues with the soils section include 1) The application should define the "equivalent" of a soil scientist as used in the text on page 2-7 section 232.100. 2) The combined acreage of H and J must be provided, so that the acreage to be reclaimed can be figured by difference.

R645-310-232.500, The potential for a subsoil pile containing soils of Map Units B and C and a substitute topsoil pile containing the more desirable soils of D, E, and F should be explored and a plan for distribution of subsoil followed by topsoil should be promoted and approximate yardage and cover thickness for each type of cover material should be specified in RA Attachment 2-2

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R645-301-233.100, Boulders, gravel and projected soil recovery in excess of that recommended for substitute topsoil in RA Attachment 2-1 may not be stored in the substitute topsoil storage pile.

R645-301-234.210, The layout of the area dedicated to stockpiling and the approximate acreage designated for the substitute topsoil stockpile must be indicated on a map so that the adequacy of the site to store 44,000 cu yds can be assessed.

R645-301-242.120, -242.130, The application should indicate that soils will be handled only when they are in a loose or friable condition or when the moisture content is an optimal 10 – 15%. Generally, two rules apply: a) If the soil sticks to the equipment, wait until the soil has dried to a friable state. b) If the soil is too dry and hard to handle, resembling flour, add water until the soil is wetted to a loose, friable condition.

VEGETATION

Regulatory Reference: R645-301-330, -301-331, -301-332.

Analysis:

The plan lists an interim seed mixture and specifies that it will be used on the topsoil stockpile and any other areas requiring stabilization prior to final reclamation. The plan should state that all areas not actively being utilized will be planted with an interim seed mixture until establishment and final grading.

Findings:

Information provided in the application is not considered adequate to meet the minimum requirements of the Operation Plan - Vegetation section of the regulations. Prior to approval, the Permittee must provide the following in accordance with:

R645-301-331, The plan should state that all areas not actively being utilized will be planted with an interim seed mixture until the vegetation becomes established and final grading.

ROAD SYSTEMS AND OTHER TRANSPORTATION FACILITIES

Regulatory Reference: 30 CFR Sec. 784.24, 817.150, 817.151; R645-301-521, -301-527, -301-534, -301-732.

Analysis:

Road Classification System

The Applicant has not classified the access road from the county road to the refuse pile as a primary road. This road will be utilized throughout the year for fifteen years. The Applicant has shown only a portion of the road to be reclaimed as indicated on Plate 5-3. Therefore, it is to be retained for a post-mining land use.

Plans and drawings

The Applicant has not addressed a plan including a detailed description of each road to be used or maintained within the proposed permit area. The description will include a map, appropriate cross sections, and comply with R645-301-527.210, and R645-301-527.240.

The Applicant must describe designs for the access road and comply with R645-301-534 thru R645-301-534.340.

Performance standards

The Applicant has not addressed a maintenance plan as described in R645-301-527.230.

Primary road certification

Detailed design plans must be prepared by, or under the direction of, and certified by a qualified, registered, professional engineer. Applicant will have to submit a road design for the access road to the refuse pile.

Findings:

Information in the proposal is not adequate to meet the requirements of the Operation Plan – Road Transportation and Other Transportation Facilities section of the regulations. Prior to final approval, the applicant must supply the following information in accordance with:

R645-301-527.100, the access road from the Carbon County road to the refuse pile must be classified as a primary road.

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R645-301-527.200, the plan must include a detailed description of each road used, or maintained, within the proposed permit area. The description will include a map with the appropriate cross section.

R645-301-527.210, specification for each road width, road gradient, road surface, road cut, fill embankment, culvert, bridge, drainage ditch, and drainage structure.

R645-301-527.230, A maintenance plan describing how roads will be maintained throughout their life to meet the design standards throughout their use.

R645-301-527.240, A commitment that if a road is damaged by a catastrophic event, such as flood or earthquake, the road will be repaired as soon as practical after the damage has occurred.

SPOIL AND WASTE MATERIALS

Regulatory Reference: 30 CFR Sec. 701.5, 784.19, 784.25, 817.71, 817.72, 817.73, 817.74, 817.81, 817.83, 817.84, 817.87, 817.89; R645-100-200, -301-210, -301-211, -301-212, -301-412, -301-512, -301-513, -301-514, -301-521, -301-526, -301-528, -301-535, -301-536, -301-542, -301-553, -301-745, -301-746, -301-747.

Analysis:

Refuse piles

The Applicant must comply with MSHA, 30 CFR 77.214 and 30 CFR 75.215. There has been no contact with MSHA concerning the establishment of a refuse pile at the Dugout Mine. To comply with 30 CFR 75.215 the Applicant must receive an identification number from MSHA after a site visit and approval. Contacting Billy Owens from the MSHA Denver office verified this information on July 10, 2002.

The designs and their associated evaluations were based on the results of a detail foundation and laboratory analyses of soils at the refuse pile site.

The Applicant has submitted a certified design on the construction of the refuse pile. This design will have a static safety factor of 7.48 in the refuse materials, which is greater than the minimum required 1.5 static safety factor. See RA Attachment 5-2 in the submittal.

Outslopes on the native alluvial soils will have a static safety factor of 1.62 for failure surfaces starting in the refuse and terminating in the underlying soils. This is still greater than the minimum requirement of 1.5 static safety factor.

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Coal mine waste consisting of shale, sandstone, and sediment pond waste will be stored in the refuse pile (Section 536.200). A representative sample of the Rock Canyon Seam and the Gilson Seam, roof and floor was taken of the waste in 1995. Results are located in RA Attachment 5-4. For the Rock Canyon coal sample, the Sodium Adsorption Ratio, pH and Available Water Capacity are rated poor. Both the Rock Canyon and the Gilson Roof coal samples are sodic since their Exchangeable Sodium Percentages both exceed 15% (i.e., 19% and 33%, respectively). The analysis suggests that the Rock Canyon Seam is sodic whereas the Gilson Seam and roof have little carbonate buffering capacity. The pulverized material has a texture of sand, sandy loam or loam.

Appendix 5.7 of the MRP contains the analytical results of waste rock samples taken in 1998. This waste also had little buffering capacity and met the requirements for a Fair rating due to Electrical Conductivity (4.36 mmhos/cm). The Division is aware of more gob, waste rock, sediment pond clean out and portal entry sampling that has been done since 1995. These samples should all be placed in one location and referred to in Section 536.200 of the application.

The proposed refuse pile has the capacity for 48,900 cu yds (72,600 Tons at a unit weight of 1.10 lb/ft³) of coal mine waste (RA Attachment 5-3). The life of the site is estimated at 15 years (Section 536.100) with a production of 5,000 Tons/yr. Geotechnical characteristics of this waste are described in RA Attachment 5-2. The waste has a Unified Soil Classification of GP-GM (gravel sand silt mixture).

A representative sample will be collected of every 2000 cu yds (or 2,970 Tons) to be analyzed for acid toxic characteristics of pH, Electrical Conductivity, Selenium, Boron, and Acid/base potential (Section 536.200). Sampling should include the full suite of parameters required by Table 6 of the 1988 Division Guidelines for Management of Topsoil and Overburden for Underground and Surface Coal Mining, including: Sodium Adsorption Ratio, particle size analysis, Total and Nitrate-nitrogen, % Organic Carbon, Exchangeable Sodium and Available Water Capacity.

This rate of sampling amounts to 24 samples for the completed 6 acre site. This information would be best supplied with the Annual Report for the Dugout Canyon Mine site.

Findings:

The information provided does not meet the minimum requirements of the Operation Plan - Spoil and Waste Material section of the regulations. Prior to approval, please provide the following in accordance with:

R645-301- 536.900, 1) Analysis of the coal mine waste must include the full suite of parameters listed in Table 6 of the 1988 Division Guidelines for Management of Topsoil and Overburden for Underground and Surface Coal Mining. **2)** All

OPERATION PLAN

previous portal entry, coal mine waste, gob, sediment pond clean-out sampling information must be included in the application and the location of such information should be referred to in Section 536.200 of the MRP.

R645-301-513.400, the Applicant must receive MSHA identification number and approval for the Dugout Mine refuse pile. The MSHA approval letter must be added to the MRP. MSHA number for the refuse pile must be added to R645-301-112.700 in the MRP.

HYDROLOGIC INFORMATION

Regulatory Reference: 30 CFR Sec. 773.17, 774.13, 784.14, 784.16, 784.29, 817.41, 817.42, 817.43, 817.45, 817.49, 817.56, 817.57; R645-300-140, -300-141, -300-142, -300-143, -300-144, -300-145, -300-146, -300-147, -300-148, -301-512, -301-514, -301-521, -301-531, -301-532, -301-533, -301-536, -301-542, -301-720, -301-731, -301-732, -301-733, -301-742, -301-743, -301-750, -301-761, -301-764.

Analysis:

Ground-water monitoring

The proposed groundwater monitoring outlined in the Refuse Pile amendment is adequate with one exception. Since DH-1 is screened within alluvial sediments, the Division is requesting a water quality sample be collected on an annual basis for two years, then be re-sampled at each permit renewal. Recommended analysis would follow baseline parameters outlined on Table 7-4 (pg. 7-56) of the currently approved MRP.

Surface-water monitoring

The proposed surface-water monitoring outlined in section 731.200 of the Refuse Pile amendment adequately addresses the surface drainage in the area.

Acid and toxic-forming materials

The encountering of Acid- or toxic forming materials is not anticipated at the mine. Routine sampling of the refuse will hopefully identify any such materials. If any acid- or toxic materials are identified, they will be placed in the lower level of the pile and covered with a minimum of 4-feet of cover. The additional groundwater monitoring cited above will also confirm the absence of materials leaching into the surrounding area.

Water quality standards and effluent limitations

The sedimentation pond is designed as a total containment structure. The applicant makes the commitment that all discharges of water will comply with all Utah and federal water quality laws and regulations (section 751).

Diversions

Diversion design was based on a 100-year, 6-hour precipitation event. The Division has been recommending diversions be designed to contain the runoff from a 10-year, 24-hour event; which in this case is essentially equivalent.

Section 742.300 provides a general discussion of the requirements and design of the diversions, and all diversion and culvert calculations are presented in RA Attachment 7-4 and RA Tables 7-3 and 7-4. However, the need for the lining of channels was apparently set at a peak velocity of 5 feet/second (fps). A discussion of the why 5 fps is used as the channel lining criteria needs to be included. It is assumed it is based on the material of the ditch, but that needs to be stated.

Sediment control measures

Forms of sediment control measures include silt fences, riprap, contemporaneous revegetation, vegetative sediment filters, a sediment pond, and other measures that reduce overland flow velocities, reduce runoff volumes or trap sediment. The applicant makes a commitment that these structures will be maintained to remain functional.

Siltation structures

The siltation structure within the permit area will be a sediment pond. Section 742.200, page 7-19 of the Refuse Pile amendment describes the sediment/clean out elevation of the pond, but it does not commit to installing a clean-out marker at the appropriate elevation.

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Sedimentation ponds

All calculations and design maps for the proposed sediment pond are included in the amendment and are P.E. certified. The pond is designed as a total containment structure to fully contain the runoff from a 100-year, 24-hour precipitation event (2.8 inches).

Findings:

Information in the proposal is not adequate to meet the requirements of the Operation Plan – Hydrologic Information section of the regulations. Prior to final approval, the applicant must supply the following information in accordance with:

R645-731.212, Include water quality analysis of Well DH-1 in the groundwater monitoring program.

R645-742.221.31, Provide a commitment to install clean-out markers in the sedimentation pond.

R645-742.312.1, Provide a discussion of the why 5 fps is used as the channel lining criteria.

SUPPORT FACILITIES AND UTILITY INSTALLATIONS

Regulatory Reference: 30 CFR Sec. 784.30, 817.180, 817.181; R645-301-526.

Analysis:

The Applicant has submitted facilities map Plate 5-1 which includes sediment pond, storage area, access road, topsoil storage, culvert (DC-1), and refuse storage area. This map contains the necessary information. Plate 5-1 is P.E. certified.

Findings:

The Applicant adequately addressed the minimum requirements of the Operation Plan – Support Facilities and Utility Installation section of the regulations.

SIGNS AND MARKERS

Regulatory Reference: 30 CFR Sec. 817.11; R645-301-521.

Analysis:

The Applicant has addressed this portion of the R645-301 Coal Rules. An identification sign will be displayed at the refuse pile. This sign will have all the required information.

Findings:

The information provided adequately addresses the minimum requirement of the Operation Plan – Signs and Markers section of the regulations.

MAPS, PLANS, AND CROSS SECTIONS OF MINING OPERATIONS

Regulatory Reference: 30 CFR Sec. 784.23; R645-301-512, -301-521, -301-542, -301-632, -301-731, -302-323.

Analysis:

Affected area maps

RA Plate 5-1 Storage Area Layout shows the refuse storage area, an access road, the sediment pond, two storage areas and a location for the topsoil storage. RA Plate 5-1 must also show the layout of the area dedicated to stockpiling and the acreage that will not be disturbed at the site.

Mining Facilities Maps

The Applicant has submitted facilities map Plate 5-1 which includes sediment pond, storage area, access road, topsoil storage, culvert (DC-1), and refuse storage area. This map contains the necessary information. Plate 5-1 is P.E. certified.

Findings:

The information provided does not adequately addresses the minimum operations maps and plans requirements of the regulations. Prior to approval, please provide the following in accordance with:

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R645-301-521.165, The proposed acreage, layout of the topsoil stockpile, access road and berm planned for the topsoil stockpile area must be shown on a map as well as the acreage that will not be disturbed at the site.

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GENERAL REQUIREMENTS

Regulatory Reference: PL 95-87 Sec. 515 and 516; 30 CFR Sec. 784.13, 784.14, 784.15, 784.16, 784.17, 784.18, 784.19, 784.20, 784.21, 784.22, 784.23, 784.24, 784.25, 784.26; R645-301-231, -301-233, -301-322, -301-323, -301-331, -301-333, -301-341, -301-342, -301-411, -301-412, -301-422, -301-512, -301-513, -301-521, -301-522, -301-525, -301-526, -301-527, -301-528, -301-529, -301-531, -301-533, -301-534, -301-536, -301-537, -301-542, -301-623, -301-624, -301-625, -301-626, -301-631, -301-632, -301-731, -301-723, -301-724, -301-725, -301-726, -301-728, -301-729, -301-731, -301-732, -301-733, -301-746, -301-764, -301-830.

Analysis:

The Applicant will reclaim the refuse pile area but it appears that the road from the county road will not be reclaimed. If this road will not be reclaimed, it will be considered a primary road. The sediment pond at the lower end of the refuse pile will be reclaimed.

All engineering maps related to the reclamation of the refuse pile are P.E. certified.

The refuse pile will have a 3H:1V outslope. The final controls can be seen on Figure 5-3.

The Applicant has submitted a timetable to reclaim the refuse pile area. This is on RA Figure 5-1. The table is labeled "Months From Start of Reclamation". The project from start to finish of this project would take almost 24 months or two years. This would be an extremely long time to complete this project. The RA Figure 5-1 may have a typo in the title, and should be days instead of months.

Findings:

Information in the proposal is not adequate to meet the requirements of the Reclamation Plan – General Requirements section of the regulations. Prior to final approval, the applicant must supply the following information in accordance with:

R645-301-542.100, A detailed timetable for the completion of each major step in the reclamation plan. If the timetable is correct, explain why it would take 24 months to reclaim this site.

POSTMINING LAND USES

Regulatory Reference: 30 CFR Sec. 784.15, 784.200, 785.16, 817.133; R645-301-412, -301-413, -301-414, -302-270, -302-271, -302-272, -302-273, -302-274, -302-275.

Analysis:

The post-mining land use will be wildlife habitat and livestock grazing. This will be achieved through reclamation activities. The surface owner is the same as the Permittee. The suitability of the land to support the post-mining land use cannot be assessed until other items baseline and reclamation deficiencies are addressed.

Findings:

A determination of meeting the minimum regulatory requirements of the Post-mining Land Uses section will be made after other noted deficiencies are addressed.

PROTECTION OF FISH, WILDLIFE, AND RELATED ENVIRONMENTAL VALUES

Regulatory Reference: 30 CFR Sec. 817.97; R645-301-333, -301-342, -301-358.

Analysis:

The application states that no enhancement measures are planned (Section 342.100).

Findings:

Information provided in the application is not considered adequate to meet the minimum Protection of Fish, Wildlife, and Related Environmental Values requirements of the regulations. Prior to approval, the Permittee must provide the following in accordance with:

R645-301-342.100, Where the plan does not include enhancement measures, a statement will be given explaining why enhancement is not practicable.

APPROXIMATE ORIGINAL CONTOUR RESTORATION

Regulatory Reference: 30 CFR Sec. 784.15, 785.16, 817.102, 817.107, 817.133; R645-301-234, -301-412, -301-413, -301-512, -301-531, -301-533, -301-553, -301-536, -301-542, -301-731, -301-732, -301-733, -301-764.

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Analysis:

The area around the refuse pile will be reclaimed back to Approximate Original Contour. The refuse pile itself will be approximately ten feet higher than the original ground prior to placement of the refuse.

Findings:

Information provided in the proposal adequately addresses the minimum requirements of the Reclamation Plan – Approximate Original Contour Restoration section of the regulations.

BACKFILLING AND GRADING

Regulatory Reference: 30 CFR Sec. 785.15, 817.102, 817.107; R645-301-234, -301-537, -301-552, -301-553, -302-230, -302-231, -302-232, -302-233.

Analysis:

General

There will be some backfilling and grading to this area. The sediment pond will be breached and the embankments will be pushed into the pond, creating a gentle slope. The diversion ditches will be filled-in by pushing the downstream berm into the ditches. This would create a free draining surface.

Steep Slopes

The Applicant has indicated on Page 5-24 that prior to seeding all areas with a slope of 3h:1v or steeper will be roughened using a trackhoe. These slopes are most likely to appear on the refuse pile. The Applicant will need to add a statement that no reclamation area will exceed a slope steeper than 2h:1v.

Findings:

Information in the proposal is not adequate to meet the requirements of the Reclamation Plan – Backfilling and Grading section of the regulations. Prior to final approval, the applicant must supply the following information in accordance with:

R645-301-553.251, The final configuration for the refuse pile will not be steeper than 2h:1v (50 percent).

TOPSOIL AND SUBSOIL

Regulatory Reference: 30 CFR Sec. 817.22; R645-301-240.

Analysis:

Redistribution

Section 242.100 and RA Attachment 2-2 outlines four feet of cover over the refuse pile. This will require approximately 36,700 cu yds of soil. The Permittee has figured that remainder of the salvaged substitute topsoil (7,610 cu yds) will be applied to the rest of the site. The Permittee has not subtracted from the acreage to be reclaimed the undisturbed map units J and H.

In addition, some of the total cover (44,317 cu yds) is not substitute topsoil, but excess spoil or subsoil. A plan for distribution of subsoil followed by topsoil should be promoted and approximate yardage for each type of cover material should be specified in RA Attachment 2-2 (see discussion under Operations Plan, Topsoil and Subsoil and deficiency written under R645-301-232.500).

Prior to redistribution, the substitute topsoil will be sampled and analyzed for pH, EC, total Carbon, SAR, Phosphorus, Nitrate-nitrogen and water holding capacity.

Where operations have created compaction, the ground will be ripped. The proposed depth of ripping must be indicated. In addition, the four feet of cover over the refuse must be uncompacted to allow root growth. If the refuse is combustible, more cover may be required such that an uncompacted four foot zone can be achieved.

The substitute topsoil will be spread using track-mounted equipment only. Erosion will be controlled with gouging and mulch as described in Chapter 3 of the approved MRP.

Findings:

The information provided does not adequately address the minimum requirements of the Reclamation Plan - Reclamation Topsoil and Subsoil section of the regulations. Prior to approval, please provide the following in accordance with:

R645-301-251, When determining substitute topsoil cover depth over the reclaimed site, RA Attachment 2-2 and Section 242.100 must account for the acreage of undisturbed soil map units H and J.

R645-301-242.200, The plan must indicate the proposed depth of ripping of compacted areas and the plan must indicate the depth of uncompacted cover over the refuse to allow root growth.

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ROAD SYSTEMS AND OTHER TRANSPORTATION FACILITIES

Regulatory Reference: 30 CFR Sec. 701.5, 784.24, 817.150, 817.151; R645-100-200, -301-513, -301-521, -301-527, -301-534, -301-537, -301-732.

Analysis:

Reclamation

The Applicant will reclaim a portion of the road to the refuse pile. It appears that 600 ft. from the County road will not be reclaimed. This section of road will be used in the post-mining land use, which is wildlife habitat and livestock.

Retention

The Applicant will leave approximately 600 feet of road from the county road. This road will be considered a primary road since it will not be reclaimed and will be used in the post-mining land use (R645-301-527.123). This road has not been classified or designed as a primary road. The reviewer has written deficiencies on this topic in this document.

Findings:

Information in the proposal is not adequate to meet the requirements of the Operation Plan – Hydrologic Information section of the regulations. The reviewer has written deficiencies to address this issue under “ROAD SYSTEMS AND OTHER TRANSPORTATION FACILITIES” above.

HYDROLOGIC INFORMATION

Regulatory Reference: 30 CFR Sec. 784.14, 784.29, 817.41, 817.42, 817.43, 817.45, 817.49, 817.56, 817.57; R645-301-512, -301-513, -301-514, -301-515, -301-532, -301-533, -301-542, -301-723, -301-724, -301-725, -301-726, -301-728, -301-729, -301-731, -301-733, -301-742, -301-743, -301-750, -301-751, -301-760, -301-761.

Analysis:

Discharge structures

Section 762.100 discusses the reclamation of channels RWS-1 and RWS-2, which includes portions of the channels that will have riprap installed as part of final reclamation. Identify on RA Plate 7-3 which portions of the channels will have riprap installed, and provide or refer to a cross section diagram illustrating the proposed riprap design.

Findings:

Information in the proposal is not adequate to meet the requirements of the Reclamation Plan – Hydrologic Information section of the regulations. Prior to final approval, the applicant must supply the following information in accordance with:

R645-301-761, Identify on RA Plate 7-3 which portions of the channels will have riprap installed, and provide or refer to a cross section diagram illustrating the proposed riprap design.

REVEGETATION

Regulatory Reference: 30 CFR Sec. 785.18, 817.111, 817.113, 817.114, 817.116; R645-301-244, -301-353, -301-354, -301-355, -301-356, -302-280, -302-281, -302-282, -302-283, -302-284.

Analysis:

Revegetation: General Requirements

Section 341.200 lists the final seed mixture. This seed mixture needs to be refined to more closely match the current vegetation and existing community. Replanting community dominants are important although the Division agrees that the pinyon and juniper can be allowed to naturally invade. The seed mixture quantities are given at rates used in drill seeding. Generally, broadcast seeding rates (includes hand and hydroseeding methods) are double the amount of drill quantities. Normal broadcast seeding rates are 50 to 100 pure live seeds per square foot. The quantities of seed must be reduced to that rate and expressed in broadcast rates since this will be the method used.

The area proposed for the refuse pile is dry and difficult to reclaim. The Soldier Creek mine has a history of cheatgrass invasion on disturbed areas. The operational and final contours of the refuse pile should be designed to maximize soil moisture and minimize evaporation and solar heat. The refuse pile must be redesigned to maximize the east facing slope and minimize the south and southwest facing slopes.

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Revegetation: Timing

The vegetation survey found warm season grasses that will need to be seeded separately and prior to the cool season species. The application must address the timing requirements for the various species.

Revegetation: Mulching and Other Soil Stabilizing Practices

The disturbed area will be mulched using 2000 pounds per acre hydromulch (Section 341.200). The application states the area will be left in a roughened state after ripping. The application must commit to extreme surface roughening technique described in The Practical Guide to Reclamation in Utah.

Revegetation: Standards For Success

The application is confusing concerning what the site currently looks like and this section will not be addressed until all baseline data is technically adequate.

Findings:

Information provided in the application is not considered adequate to meet the minimum requirements of the Reclamation Plan - Revegetation section of the regulations. Prior to approval, the Permittee must provide the following in accordance with:

R645-301-353.100, (1) The seed mixture needs to be refined to more closely match the resource data and existing vegetative community. (2) Normal broadcast seeding rates are 50 to 100 pure live seeds per square foot. The quantities of seed must be reduced to that rate and expressed in broadcast rates since this will be the method used.

R645-301-353.220 and R645-301-354, The vegetation survey found warm season grasses that will need to be seeded separately and prior to the cool season species. The application must address the timing requirements for the various species.

R645-301-553.150, The operational and final contours of the refuse pile must be designed to maximize soil moisture and minimize evaporation and solar heat. The refuse pile must be redesigned to maximize the east-facing slope and minimize the south and southwest facing slopes.

R645-301-340, The application must commit to extreme surface roughening technique described in The Practical Guide to Reclamation in Utah.

STABILIZATION OF SURFACE AREAS

Regulatory Reference: 30 CFR Sec. 817.95; R645-301-244.

Analysis:

The soils of the site are Haverdad loam (#50) and the Hernandez family and the Strych series soils. These soils have erosion factors between 0.28 and 0.37 according to the 1988 Carbon County Soil Survey. Even at the relatively mild slope of 3h:1v proposed for the refuse disposal site, these exposed soils will be highly susceptible to erosion from water. Wind erosion is also a concern for these soils once they are disturbed.

The application indicates the site will be roughened with gouging and mulched according to the methods described in Chapter 3 of the approved MRP and that Rills and gullies in excess of 9 inches will be filled and reseeded (Section 244.300). Chapter 3 does not describe gouging of all disturbed areas.

The approved MRP Section 340 indicates 2000 lbs of wood fiber mulch will be applied with a tackifier to the seeded site. The application states that 1 Ton/ac hay will be incorporated to the topsoil. The MRP indicates that the gouging technique will be limited to slopes too steep to retain a mulch application (page 3-44). All surface disturbed areas should be gouged to reduce erosion.

Findings:

The information provided is not adequate the minimum requirements of the Reclamation Plan – Stabilization of Surface Areas section of the regulations. Prior to approval, please provide the following in accordance with:

R645-301-244, 1) The reclamation plan should include best management practices to reduce wind and water erosion at the site. i.e. The Division has noted that the incorporation of straw or hay into the surface prior to seeding and gouging of the surface will reduce wind and water erosion. **2)** The reclamation plan for the site should specify that all disturbed surfaces will receive extreme surface roughening as described in the Technique Sheet, Part II of The Practical Guide to Reclamation in Utah available on the internet at <http://www.dogm.nr.state.ut.us>.

CESSATION OF OPERATIONS

Regulatory Reference: 30 CFR Sec. 817.131, 817.132; R645-301-515, -301-541.

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Analysis:

Upon the permanent cessation of coal mining and reclamation operation at the Dugout Canyon Mine, Canyon Fuel Company, LLC, will close, backfill, or otherwise permanently reclaim all affected areas in accordance with the R645 regulations and this reclamation plan.

Findings:

Information provided adequately addresses the minimum requirements of the Reclamation Plan – Cessation of Operations section of the regulations.

MAPS, PLANS, AND CROSS SECTIONS OF RECLAMATION OPERATIONS

Regulatory Reference: 30 CFR Sec. 784.23; R645-301-323, -301-512, -301-521, -301-542, -301-632, -301-731.

Analysis:

Affected area boundary maps

There will be no impacts due to the fact that no mining of any type will occur in this area.

Bonded area map

The bonded area is the permit area and the Applicant has met this requirement. This map is P.E. certified.

Reclamation backfilling and grading maps

The Applicant has submitted Plate 5-4 giving information on the backfilling and grading for the refuse pile area.

Reclamation facilities maps

There will be no facilities after final reclamation. No map will be required.

Final Surface Configuration Maps

Plate 5-3 and 5-4 address the reclamation surface configurations. These maps are P.E. certified.

Reclamation surface and subsurface manmade features maps

There will be no surface or subsurface manmade features; therefore, this map will not be required.

Findings:

Information provided adequately addresses the minimum requirements of the Reclamation Plan – Maps, Plans, and Cross Sections of Reclamation Operations section of the regulations.

BONDING AND INSURANCE REQUIREMENTS

Regulatory Reference: 30 CFR Sec. 800; R645-301-800, et seq.

Analysis:

Determination of Bond Amount

Currently the Division holds a reclamation bond for \$3,682,000 for the Dugout Mine. The Division has reduced the reclamation cost estimate during the review of other amendments. The current reclamation cost estimate calculated by the Division is for \$2,141,000 in 2007 dollars

The reclamation amount for the refuse pile is minor in comparison to the current bond amount. There is enough bond to cover the addition of the reclamation pile. Since the current bond exceeds the current reclamation cost estimate no further action need be taken in regards to the bond.

Findings:

Information provided adequately addresses the minimum requirements of the Reclamation Plan – Bonding and Insurance Requirements section of the regulations.

CUMULATIVE HYDROLOGIC IMPACT ASSESSMENT (CHIA)

Regulatory Reference: 30 CFR Sec. 784.14; R645-301-730.

Analysis:

The applicant has provided the necessary information and taken the necessary steps to minimize the potential impacts to the surrounding hydrologic regime.

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